PITTSBURGH, YOUNGSTOWN & ASHTABULA RAILROAD, BRIDGE No. 13
(Pennsylvania Railroad, Beaver River Bridge)
Pennsylvania Historic Railroad Bridges Recording Project
Spanning Beaver River, south of State Rt. 288 Bridge
Wampum
Lawrence County
Pennsylvania

HAER No. PA-532

PHOTOGRAPHS

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HISTORIC AMERICAN ENGINEERING RECORD

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(Pennsylvania Railroad, Beaver River Bridge)

HAER No. PA-532

Location:	Spanning Beaver River, south of State Rt. 288 Bridge, Wampum, Lawrence County, Pennsylvania.
USGS Quadrangle:	New Castle South, Pennsylvania (7.5-minute series).
UTM Coordinates:	17/556070/4526285
Date of Construction:	1897.
Basis for Dating:	Secondary sources.
Dates of Alteration:	1914, 1917, 1941.
Designer:	William H. Brown (Chief Engineer, Pennsylvania Railroad).
Fabricator / Builder:	Pennsylvania Steel Co. (Steelton, Pa.).
Present Owner:	Norfolk Southern Railroad.
Present Use:	Railroad bridge.
Structure Type:	Pin-connected Pratt deck truss; riveted deck and half-through girders.
Significance:	This bridge retains geometric and structural features from the late nineteenth century, despite several attempts to replace it. It is also unusual for its forgotten dual ownership, which resulted in one railroad using another's tracks without permission for more than a quarter-century.
Historian:	Justin M. Spivey, April 2000.
Project Information:	The Historic American Engineering Record (HAER) conducted the Pennsylvania Historic Railroad Bridges Recording Project during 1999 and 2000, under the direction of Eric N. DeLony, Chief. The project was supported by the Consolidated Rail Corporation (Conrail) and a grant from the Pennsylvania Historical and

Museum Commission (PHMC). Justin M. Spivey, HAER engineer, researched and wrote the final reports. Preston M. Thayer, historian, Fredericksburg, Virginia, conducted preliminary research under contract. Jet Lowe, HAER photographer, and Joseph E. B. Elliott, contract photographer, Sellersville, Pennsylvania, produced large-format photographs.

Description and History

In 1921, Interstate Commerce Commission (ICC) railroad valuation officials discovered that two different railroads were claiming the same property in Wampum, Pennsylvania. One party was the Pennsylvania Railroad (PRR), which operated the Pittsburgh, Youngstown & Ashtabula Railway (PY&A) as a leased subsidiary of its Lines West entity. The overlap occurred in the vicinity of PY&A Bridge No. 13, across the Beaver River.[1] The conflict had gone unnoticed because the other party, the Pittsburgh, Lisbon & Western Railroad (PL&W), did not operate trains over the bridge. Correspondence related to the ICC's subsequent investigation serves to explain the bridge's history.

Of the PY&A's several predecessors, a charter to build a railroad through Wampum belonged to the New Brighton and New Castle Railroad (NB&NC), incorporated in March 1881. In August 1884, the NB&NC completed its single-track route up the east bank of the Beaver River from Kenwood (just upstream from New Brighton) to Chewton, crossing the river from there into Wampum.[2] The Beaver River bridge had two tracks, however, with the NB&NC using only the south track. The north one technically belonged to another railroad under construction through Wampum at the same time, the New York, Pittsburgh & Chicago Railway (NYP&C), which evidently went bankrupt before completing its line.

Back in September 1881, the two railroads had agreed to share the Beaver River bridge and the cost of its construction. The NYP&C paid for the masonry piers, which were completed in 1883, then the NB&NC paid for the wrought-iron trusses installed the following year. Although the NB&NC reimbursed the NYP&C $5,000 for its share of the piers, the latter railroad defaulted on a reciprocal payment for the superstructure. The NYP&C's half of the Beaver River bridge subsequently went unused. As Lines West Chief Engineer Thomas Rodd explained in 1895, "The floor of this bridge was decayed and was removed from the N. Y. P. & C. Ry. side of the bridge ... about the time when we renewed the floor on our part."[3] What began as a two-track bridge essentially reverted to a single-track structure.

Meanwhile, the NYP&C charter had been acquired by the less ambitiously named PL&W, which used it to construct a line from New Galilee, Pennsylvania, to Lisbon, Ohio, a route which did not cross the Beaver River. But the Beaver River bridge's dual ownership dropped from institutional memory, or was perhaps conveniently ignored. In 1897, the PY&A contracted with the Pennsylvania Steel Company, a wholly-owned subsidiary of the PRR, to build new two-track trusses on the existing stone piers. After the PY&A double-tracked its main line in 1903, it began using both tracks on the Beaver River bridge — and continued to do so

unnoticed until the ICC valuation of 1921. Once reminded that it did not own the north track, the PY&A did not act quickly; its accounting department reported six years later that the issue had yet to be resolved.[4]

In the PY&A's defense, it had planned several times to rebuild the bridge on a new alignment, which would have made ownership of the old bridge irrelevant. Various unrealized schemes were proposed to smooth out Bridge No. 13's sharp reverse curve. The curve, resembling the letter "S" in plan, was necessary because the PY&A's nominally northbound tracks switched from the east bank to the west bank of the Beaver River at Wampum. PY&A engineers considered several new alignment options in 1895 when preparing to replace the iron trusses with steel, but then decided to re-use the existing piers.[5] In 1903, the plan was again deferred to expedite double-tracking efforts.[6] Already aware of the bridge's geometric inadequacy, the railroad's engineers began to question its load-carrying capacity as well during the 1920s. They considered the 1895 options several times more, but ultimately decided that repairs, reinforcement, and speed restrictions would suffice.[7]

Bridge No. 13 continued to carry heavy freight trains through World War II, and because the post-war decline in traffic made replacement less urgent, the main spans survive today in their 1897 form. The stone piers, dating to the first bridge of 1883, were capped with concrete in 1941. The piers are parallel to the river's current, and therefore skew to the bridge's axis. Five pin-connected Pratt deck truss spans, ranging in length from 115'-10" to 124'-0", carry the two tracks. The trusses are placed 25'-0" apart under straight tracks, and 27'-0" apart under the curving tracks at each end.[8] A 76'-0"-long riveted half-through girder and a 50'-0" riveted deck girder span the Pittsburgh & Lake Erie Railroad tracks and a local road on the west bank. Fort Pitt Bridge Works, of Canonsburg, Pennsylvania, replaced one girder span in 1914 and the other in 1917.[9]

Notes

1. John McChord, Valuation Attorney, ICC, to C. A. Preston, Valuation Engineer, Pennsylvania Railroad, 15 Feb. 1921, located in Location Files, General Manager, Central Region, Box 153, Pennsylvania Railroad Records, Historical Collections and Labor Archives, Paterno Library, Pennsylvania State University, State College, Pa. [hereinafter cited as PRR Location Files].

2. Thomas T. Taber III, *Railroads of Pennsylvania: Encyclopedia and Atlas* (Muncy, Pa.: Thomas T. Taber III, 1987), 405.

3. Thomas Rodd, Chief Engineer, Lines West, to Joseph Wood, General Manager, Lines West, 9 Apr. 1895, in PRR Location Files.

4. S. W. Troutman, Regional Accountant, to E. T. Whiter, Vice President, 5 Feb. 1927, in PRR Location Files.

5. W. D. Wiggins, Assistant to Chief Engineer, to J. B. Baker, Chief Engineer Maintenance of Way, 7 Jan. 1927, in PRR Location Files.

6. T. B. Hamilton, Superintendent, to A. M. Schoyer, General Superintendent, 14 Jan. 1903, in file: Tracks - Ohio and Pennsylvania, Folder 700, Erie & Ashtabula Division Superintendent's Files, Historical Collections and Labor Archives, Paterno Library, Pennsylvania State University, State College, Pa.

7. For several examples, see Baker, to H. E. Newcomet, General Superintendent, 25 Mar. 1925; J. F. Leonard, Engineer of Bridges & Buildings, to Baker, 18 May 1926; P. L. Grove, General Superintendent, to Baker, 28 Oct. 1926; and Baker, to Wiggins, 4 Jan. 1928.

8. Pennsylvania Railroad, Chief Engineer's Office, "General Plan of Bridge No. 13, P. Y. & A. R. R.," dated Mar. 1896; and "Erection Diagram, Span No. 1, Bridge No. 13, P. Y. & A. R. R.," date illegible, Conrail; both milepost 41.11, region/division/branch 242433, aperture card files, Consolidated Rail Corp., Philadelphia, Pa. [transferred to Norfolk Southern Railway Co., Atlanta, Ga.].

9. Coverdale & Colpitts, Consulting Engineers, *The Pennsylvania Railroad Company, Description of Important Bridges and Stations* (New York, 1945), 33. Located in file: PRR Office of Secretary, Studies by Consultants and Published Reference Materials, 1855-1958, Box 1, Penn Central Railroad Records, MG 286, Pennsylvania State Archives, Harrisburg, Pa.

Acknowledgment

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